

## WORKSHOP

### Can ethical analysis contribute to policy and practice development in wildlife conservation?

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#### INTRODUCTION

Wildlife conservation is partly a science but, as soon as we ask what should be conserved, how and why, our answers are influenced by ethical considerations. In the case of the conservation of animals, a major factor is welfare and a confounding factor can be human perceptions of the value of particular species. An obvious contrast is the reaction of people to the culling of hedgehogs on the Western Isles compared to the culling of rats on Ailsa Craig.

The workshop began with a short account of ethical analysis and the way this can be applied to issues facing nature conservationists and animal welfare biologists. Participants were then divided into small groups each to tackle and report back on a particular case (see below). Groups were asked to include the following components in their analysis:

- Individual welfare
- Species welfare (effects on **all** species involved need considered)
- Financial costs of any action (these have an ethical dimension because high costs can limit actions on other projects)
- Effects on the public
- Priority evaluation (again, has an ethical dimension because of effects on other projects)

For each component, participants were asked to try to quantify on a scale from high to low. For example, culling a large number of invasive mammals would be ranked highly harmful to individual welfare, but could be mitigated by using a humane culling procedure. The workshop was run twice with nine participants each time.

#### CASES

##### 1. Re-wilding Scotland

Human activities in the past have often led to the local extinction of animals previously common. For examples, beavers disappeared from Scotland by the 16<sup>th</sup> Century as a result of excessive hunting. Beavers have recovered their numbers elsewhere in Northern Europe, as a result of active conservation efforts. Beavers were re-introduced to Scotland in 2009. Other candidates for re-introduction include bears, wolves and lynx. Some refer to such efforts to restore populations of locally extinct animals as "re-wilding". N.B. For follow-up reading, see Rubenstein *et al* (2006) for a critique of re-wilding proposals in North America., from ethical and ecological view points, and Sandler (2010); and Huynh (2011). As part of your discussion, consider whether you should re-introduce parasites of species you are restoring to an area, as well as the species of interest (Moir, 2012).

#### REFERENCES

- Huynh *Bioessays* 33, 100 (2011)  
Moir *Conservation Biology* 26, 199 (2012)  
Rubenstein *et al Biological Conservation* 132, 232 (2006).  
Sandler *Conservation Biology* 34, 424 (2010).

##### 2. The grey squirrel/red squirrel interaction

Another of our workshops covers this topic: here, we can concentrate on an ethical analysis. Grey squirrels are certainly an introduced species in Scotland and they are successful and invasive. They are carriers of squirrel pox but the disease does not kill them: it can be fatal for red squirrels. Red squirrels have reduced in numbers and distribution for a number of reasons, including competition from greys and disease spread. In towns and cities in Scotland, grey squirrels are the wild small mammals most people are likely to encounter: they are very popular with families in parks because of their inquisitive behaviour.

##### 3. Threats to genetic integrity

We tend to learn in school that members of different species do not inter-breed, and if, rarely, they do, then they do not produce viable offspring. However, this is a simplification, especially in plants, where inter-specific hybridisation is common. In animals, successful hybridisation can occur between species that would normally not encounter one another in the wild, as a result of human interference. In Scotland, two examples of this have caused a conservation problem:

- Red deer and sika deer: sika deer originate from Japan but have been kept (and escaped from) deer parks in Scotland since the 19<sup>th</sup> century. They hybridise readily with red deer.

- Scottish wild cat and feral domestic cats. The domestic cat is derived from the Middle East, but if they return to the wild in Scotland, they hybridise easily with wild cats.

The offspring of these hybridisations have a mix of parental genes and some people regard them as a threat to the genetic integrity of the native species.

#### 4. Triage

Triage is a system widely used in the health service for rapidly assessing priorities as patients are admitted to hospital. Since funds available for wildlife conservation are limited, some conservationists have suggested we need a triage system in conservation, where we divide species into three categories.

- Top priority for conservation
- Medium priority: conserve if funds allow
- No need to put effort into this group.

But what criteria would we use to place species into these categories? See Ochoa-Ochoa (*Biol Cons* 144, 2710 2011) for an explicit use of triage with respect to amphibian conservation in Mexico – but with no ethical content. Should we have such a system for wildlife conservation in Scotland, and if so consider the ethical criteria we might use to divide species into the three categories.

#### 5. Coping with invasive alien species

Examples of alien species can be disease organisms (such as chytrid fungus which affects amphibians), plants such as *Rhododendron ponticum*, Japanese knotweed, Himalayan balsam etc; or animals in the wrong place such as hedgehogs on the Outer Hebrides; or escaped farmed animals like mink, signal crayfish.

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## Natives, Aliens and Reintroductions: Closing Remarks

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We have had a very full and varied day, and I am not going to attempt to summarise all the talks in just a few minutes. The conference proceedings will be published in *The Glasgow Naturalist* and that will provide an opportunity for participants and the

wider conservation and natural history community to reflect on the contents.

I'd like to thank all the speakers for providing such a fascinating and highly accessible set of talks on our various themes. We heard extensively about alien species: from Chris Smout, how do we define aliens, a magisterial historical perspective; then contrasting views on alien plants – from Jim Dickson (summary: many do no real harm) and Stuart Brabbs (the costs and effectiveness of eliminating invasive riverbank aliens); from Stan Whitaker, law and practice in dealing with aliens not all of which are invasive. The law in Scotland now defines native species according to their natural range, rather a problematic concept, given the dispersal abilities of so many species. On alien animals, Zara Gladman covered the rapid invasion of the North American signal crayfish but also the oddity that the white-clawed crayfish is not a native to Scotland but is in England and because it is threatened there, the two introduced Scottish populations are protected.

On re-introductions, we heard about the Scottish beaver trial but also about more local “re-introductions” where threatened fish populations have been successfully introduced to new lochs (would this count as an alien invasion under the new law?).

On natives under threat, we heard about studies and conservation schemes involving the chequered skipper butterfly, wild pollinators and farmland waders. This theme also included the great opportunity provided by the establishment of RSPB Loch Lomond, a nature reserve with huge potential for the protection of a wide range of native species. Another theme was public attitudes to wildlife: the badger cull has just begun in England, though not planned for Scotland. But Andy Riches showed that badger baiting is surprisingly common in Scotland. Probably the most depressing contribution (though entertainingly presented) was Stephen Woodward's account of the new pathogens spreading to attack our forest trees.

Finally, a personal note: I found it wonderful that we were able to hear authoritative talks from three recent Glasgow Zoology graduates: Ellen Rotheray, Roisin Campbell-Palmer and Zara Gladman, all of whom learned some of their fieldwork skills on University of Glasgow Trinidad expeditions. Postscript:

Chris Thomas, professor of conservation biology at the University of York, and a leading researcher into the biodiversity consequences of climate change, raised many of the issues covered in our conference in a short ‘Nature’ World View article (Thomas, 2013). He claims that the UK has gained rather than